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ABSTRACT

The literature on employment growth in the United States and selected industrialized countries and the wage, benefits, and job security characteristics of new and existing jobs were analyzed to determine how job growth and quality in the United States during the 1980s and 1990s compares to that in other industrialized countries. Among the study's main findings were the following: (1) although job growth has been greater in the United States than in most other industrialized countries, only 20-30% of the differential in employment rates between the United States and European countries during the 1980s is accounted for by cross-country differences in unemployment rate trends; (2) not all groups benefited from the strong job growth in the United States in the 1980s (for example, rates of unemployment/labor force nonparticipation among less-educated prime-age men have increased significantly); (3) although a disproportionate number of new jobs were added in high-paying occupations in 1988-93, 20% of net new jobs were added in occupations at the bottom of the earnings distribution; and (4) the biggest deterioration in job quality in the United States has been due to deteriorating wages and benefits across a broad spectrum of new and existing jobs. (Contains 39 references.) (MN)

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Job Growth and the Quality of Jobs in the U.S. Economy

Upjohn Institute Staff Working Paper 95-39

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Job Growth and the Quality of Jobs in the U.S. Economy

Susan N. Houseman

Abstract

During the 1980's employment grew rapidly in the United States, prompting many analysts to label the U.S. economy the great American job machine. But while aggregate employment increased rapidly during the 1980's, many did not benefit from the expansion. Among less educated prime-age males, unemployment rates rose and labor force participation rates declined sharply. Moreover, although job growth was high, many argued that the quality of American jobs—as measured by wages, benefits, and job security—deteriorated. The decline of jobs in the high-paying manufacturing sector and the growth of jobs in the low-paying services sector, the growth in part-time and temporary employment, and the general decline in real wages among less-educated, less-skilled workers have been presented as evidence of an erosion in job quality.

The issue of job growth and job quality in the American economy has sparked extensive debate among policymakers and academics over the last decade. The aim of this paper is to critically examine the evidence on job growth and on wages and other indicators of job quality in the U.S. economy during the 1980's and 1990's. To place the American experience in perspective, selected comparisons are made to the experiences in other industrialized countries.

The paper is divided into three main sections. In section 1, I look at employment growth in the United States during the 1980's and 1990's. I examine whether and to what extent employment growth was greater in the United States than in other industrialized countries and whether strong employment growth in the United States signaled a healthy economy. I compare the employment performance of the U.S. economy during the 1980's with that in other industrialized countries, and study the factors underlying the cross-country differences in employment growth: differences in the growth of the working age population, differences in the growth in labor force participation, and differences in the growth in unemployment. I also examine differences in the employment experiences across groups of workers defined by gender, education, and age within the United States. In addition, the relation between employment growth, productivity growth, and growth in per capita GDP in the United States and other industrialized countries during the 1980's is explored. Finally, trends in employment growth in the United States during the 1990's are discussed.

In sections 2 and 3 of the paper, I examine whether and in what sense there is any evidence that the quality of jobs in the United States has declined. The literature pertaining to trends in the quality of jobs in the U.S. economy falls into at least two main categories: (1) studies of the wage, benefits, and job security characteristics of new jobs created; and (2) studies of trends in real wages, benefits, and earnings inequality. The latter deals with trends in new as well as existing jobs.

In section 2 of the paper, I review evidence from several studies on the wage distribution of occupations and industries in which new employment was created during the 1980's and 1990's. I also look at trends in the growth of involuntary part-time employment and temporary employment, which are characterized by low wages, few benefits, and little job security.

In section 3 of the paper, I present evidence on trends in wages and benefits across groups of workers and the growth of wage inequality in the United States during the 1980's and 1990's. I review evidence concerning the causes of the decline in real wages among less-educated workers and the growth in wage inequality in the United States. I also review evidence from studies of trends in real wages and wage inequality in other industrialized countries and discuss why trends abroad typically have differed from those in the United States.

In section 4, I summarize the evidence on job growth and the quality of jobs in the United States during the 1980's and 1990's and discuss the implications for U.S. policy.

Job Growth and the Quality of Jobs in the U.S. Economy

Upjohn Institute Staff Working Paper 95-39

Susan N. Houseman

1. Job Growth in the United States

The bright spot in the American economy during the 1980's was the rapid growth in employment. Although job growth during the 1980's was stronger in the United States than in most other industrialized countries, cross-country differences in employment performance are often exaggerated. This is because many journalists and even academics have compared absolute levels of job growth or rates of job growth, which fail to control for differences in population size or differences in rates of population growth across countries.

Consider the following identity:

$$E = P * LFPR * (1\text{-}UR)$$

Employment (E) equals population (P) times the labor force participation rate (LFPR) times one minus the unemployment rate (UR), which I term the employment rate. Employment growth, in turn, may be expressed as the sum of the growth rate in population, the growth rate in the labor force participation rate, and the growth rate in the employment rate.

Table 1 shows the decomposition of employment growth into the part due to changes in population, the part due to changes in the labor force participation rate, and the part due to changes in the employment rate for the United States, Australia, Canada, Japan, Germany, France, and the United Kingdom over the 1979-89 period. Among this set of countries, Australia had the highest rate of employment growth over the 1979-89 period, followed by Canada, the United States, and Japan. The European countries experienced much lower rates of employment growth over the period.

The supply of new workers in an economy is the most important determinant of employment growth in all countries. In the United States over 70 percent of the growth in employment may be attributed to the growth in the working-age population over the 1979-89 period. The greater rate of growth in employment in Australia compared to the United States may be ascribed entirely to the higher rate of growth of the working age population in Australia compared to that in the United States. The rates of population growth in the United States, Canada, and Japan were similar over the period, but the rate of population growth was much greater in the United States than in the European countries. The difference in population growth rates accounts for 48 percent of the difference in employment growth rates between the United States and Germany, 23 percent of the difference in employment growth rates between the United

States and France, and 56 percent of the difference in employment growth rates between the United States and the United Kingdom.

The growth rate of the labor force participation rate in the United States was lower than that in Canada, about the same as that in Australia, and substantially greater than that in Japan and the European countries. Because population growth rates were similar and unemployment rates were virtually unchanged in the United States, Canada, and Japan over the period, most of the difference in employment growth rates among these three countries may be ascribed to the difference in the growth rate of the labor force participation rate. Except for France, where the labor force participation rate of males declined sharply over the period, reflecting an extremely weak labor market in that country, the male labor force participation rate declined modestly in all countries. While the decline in the male labor force participation rate tended to be somewhat less in the United States than in other countries, the rise in the female labor force participation rate was much greater in the United States in both an absolute and a relative sense than in the other countries, except Australia and Canada.[1]

Greater growth rates in the female labor force participation rate do not necessarily indicate a healthier economy, however. As is discussed further below, the real wages of most American men were stagnant or declining during the 1980's, whereas the real wages for most Japanese and European men rose. Many American women may have entered the labor force to maintain their families' living standards, partly explaining the greater growth in female labor force participation rates in the United States compared with Japan and Europe. The dramatic increase in divorce rates in the United States also pushed many women into the labor force.[2]

Finally, the rise in unemployment rates during the 1980's in Germany, France, and the United Kingdom also contributed to slower growth in employment in these countries than in the United States. Between 20 and 30 percent of the difference in the rate of employment growth in Germany, France, and the United Kingdom compared to that in the United States is accounted for by the growth in the unemployment rate in each of these countries relative to that in the United States. The German unemployment rate was considerably below the U.S. rate in 1979 and increased to about the same level as the U.S. rate during the 1980's. The French and British unemployment rates were similar to the U.S. rate in 1979, but were considerably higher than the U.S. rate in 1989.[3]

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[1]Between 1979 and 1989 the female civilian labor force participation rate grew from 50.9 percent to 57.4 percent in the United States, from 44.3 to 52.2 percent in Australia, from 49.0 to 57.9 percent in Canada, from 39.9 percent to 42.7 percent in Germany, from 44.3 percent to 47.0 percent in France, from 47.8 percent to 52.6 percent in the United Kingdom, and from 46.6 percent to 48.5 percent in Japan, according to the U.S. Bureau of Labor Statistics.

[2]For a discussion of the role of higher divorce rates and declining real income in raising female labor force participation rates in the United States, see Wilensky (1992).

[3]I am referring to standardized unemployment rates published by the U.S. Bureau of Labor Statistics. A similar series is also published by OECD.

In sum, the rate of employment growth was significantly greater in the United States than in Japan and the European countries, though it was lower in the United States than in Australia and Canada. Most of these differences may be explained by higher population growth and/or higher growth in the labor force participation rate in the United States. Virtually all of the U.S.-Japanese employment growth differential may be explained by a higher rate of growth in the labor force participation rate, which, in turn, is partly due to the higher growth in female labor force participation in the United States compared to Japan. Almost none of the employment growth differential between the United States and Japan and less than 30 percent of the employment growth differential between the United States and the European countries is accounted for by cross-country differences in movements in the unemployment rate.

Table 2 presents trends in two components of job growth—the labor force participation rate and the unemployment rate—in the United States. The table shows labor force participation rates and unemployment rates among prime age workers by gender, education, and age for the years 1979, 1989, and 1993. The years 1979 and 1989 were business cycle peaks, but in 1993 the labor market was still emerging from recession. As already noted, the labor force participation rate of men over the 1979-89 period actually declined slightly, while that of women rose sharply. Yet, the trends among men and among women varied greatly. The labor force participation rate for men dropped primarily because older males were retiring earlier. The labor force participation rate of men age 55-64 declined substantially for all education groups, but, notably, it declined the most in both an absolute and a relative sense among the least-educated men. Moreover, the labor force participation rate of younger men with less than a high school degree also dropped sharply during the 1979-89 period, despite the rapid expansion of jobs. For example, among males with less than a high school degree the labor force participation rate dropped from 90.7 percent to 85.1 percent for those age 35-44 and from 85.4 percent to 80.9 percent for those age 45-54 over the 1979-89 period. Although the labor force participation rate in most male age and education groups fell further from 1989-93, possibly reflecting some lingering effects of the recession, the decline in the labor force participation rate of males with less than a high school degree was the greatest.

Among women, the labor force participation rate increased over the 1979-89 period in most age-education groups, but the growth was notably smaller for women with less than a high school degree. Furthermore, the labor force participation rate of women with less than a high school degree declined over the 1989-93 period in all age groups, while that of other female education-age groups generally remained about the same or increased somewhat.

Trends in the unemployment rate also vary considerably by gender, education, and age. Although the aggregate unemployment rate improved slightly over the 1979-89 period, it increased significantly for certain groups of workers, particularly less-educated men. Between 1989 and 1993 the unemployment rate rose for most groups; the absolute increase, though not always the relative increase, in the unemployment rate tended to be greater for less-educated workers.

Thus, although the American economy experienced rapid job growth during the 1980's, not all groups of workers benefitted from the strong growth. Higher unemployment rates and dramatically lower labor force participation rates among less-educated, prime-age men show that many were excluded from the expansion.

A. Job Growth and Productivity

Although job growth was greater in the United States than in many other industrialized countries during the 1980's, this greater job growth did not translate into greater growth in real GDP per capita. GDP per capita may increase because the output per employed person increases or because the proportion of the population that is employed increases. Table 3 decomposes the real growth in GDP per capita into the growth in labor productivity and the growth in employment per capita for the United States, Australia, Canada, Japan, Germany, France, and the United Kingdom over the 1979-90 period.[4] Except for Japan, all of these countries experienced similar growth in per capita real GDP over the period. Interestingly, the countries with high rates of employment growth and high rates of growth in the employment to population ratio, the United States, Australia, and Canada, also had low productivity growth over the period.

Blank and Card (1993) point out that the growth in real GDP per capita during the 1980's expansion matched the rapid rate of growth in the 1960's (2.7 percent per annum). However, while the primary source of the growth in real GDP per capita was productivity growth in the 1960's, the primary source of growth in real GDP per capita was employment growth in the 1980's. This low growth in productivity is closely connected to stagnant real wages in the United States in the 1980's.

Although job growth in the U.S. economy was strong during the 1980's, it has been weak in the 1990's. In particular, job growth following the moderate recession in 1990-91 was quite slow, causing some to label it the "jobless recovery." Subsequently, however, the pace of job growth increased significantly, and it is too early to tell at the time of this writing whether trend growth in the 1990's will be slower than that in the 1980's.

2. The Quality of New Jobs Generated by the American Economy

Although job growth in the U.S. economy has been generally strong over the last decade, many have argued that the "quality" of the jobs being generated is low, where quality refers to the pay and benefits of the job. On the surface this argument would appear to have some merit. As evident in Table 4, the U.S. economy has undergone dramatic structural transformation with a fall in the proportion of employment in the high-paying goods- producing sector and a rise in the proportion of employment in the low-paying services sector. The share of employment in

[4]The rate of growth in GDP per capita may be expressed as the sum of the rate of growth in GDP per employed person and the rate of growth in employment per capita.

manufacturing was 28.7 percent in 1969, 23.4 percent in 1979, 17.9 percent in 1989, and 16.2 percent in 1993. Both the absolute increase and the share increase in employment have been greatest in services. The share of employment in services rose from 15.8 percent in 1969, to 19.1 percent in 1979, to 25.0 percent in 1989, to 27.4 percent in 1993.

A study by Bluestone and Harrison (1986) for the Joint Economic Committee of the U.S. Congress was the first to explicitly question the quality of the jobs being created in the U.S. economy in the 1980's. That study examined job growth during the 1979-84 period. Using data from the Current Population Survey (CPS), the authors tabulated the earnings distribution of net new employment generated over the period according to a classification of annual earnings into low, medium, and high earnings categories; medium earnings in this study were defined as lying, in real terms, between 50 percent and 200 percent of median earnings in 1973. Bluestone and Harrison found that the proportion of workers in middle- and high-wage jobs fell, while the proportion of workers in low-wage jobs rose over the 1979-84 period.

These controversial findings spurred rebuttals by Kosters and Ross (1987, 1988) which, using similar methodologies, often came up with contradictory findings.[5] Interestingly, despite the terminology of "net new employment" used in these articles, they do not isolate the wage distribution of new jobs generated. Changes in the distribution of their measure of "net new employment" capture the effect of changes in the distribution of wages in existing jobs as well as of wages in net new jobs. Kosters and Ross acknowledged this point in their papers and emphasized the importance of studying changes in the distribution of all wages, not just the distribution of wages in newly created jobs.[6] I will return to the issue of wage levels and the distribution of wages below.

Several studies have tried to better measure the quality, as indicated by wages, of net new jobs created in the economy. To do so, these studies ordered detailed industries or occupations according to the mean or median wage paid at a point in time—the end point in the study—and examined changes in the distribution of employment by industry or occupation between two points in time. Because industries or occupations receive the same ordering in the two points in time, the analysis is unaffected by changes in the wages paid by an industry over time. It should be noted, however, that these studies can only tell us whether, on net, employment is being added in high-paying or low-paying industries or occupations. We do not have data that would permit us to tell whether the new jobs themselves are high or low paying.[7]

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[5]For a thorough critique of the methodology used in these studies and explanation of the sensitivity of the results to seemingly small changes in assumptions, see Costrell (1990).

[6]Bluestone and Harrison also acknowledged this point in their article, though they couch much of their argument in terms of the quality of new jobs and their results have been widely misinterpreted.

[7]Any occupation has a wide distribution of earnings and a new job created in a high-paying occupation might itself be low paying, for example.

Rosenthal (1985) used CPS data to order 416 occupations by their median earnings in 1982 and looked at changes in the distribution of employment across occupations over the 1973-82 period. He found that the share of employment in the occupations with median wages in the top third of the distribution in 1982 increased between 1973 and 1982, while the share of employment in occupations with median wages in the bottom third of the distribution in 1982 decreased between 1973 and 1982; the share of employment with median earnings in the middle third of the distribution decreased only slightly between the two years. McMahon and Tschetter (1986) found similar trends when they analyzed changes in the distribution of employment across occupations between 1983 and 1985. Thus, these studies suggest that the majority of net new jobs created in the 1970's and early 1980's were in high-paying occupations.

Using data from the Current Establishment Survey (CES) Costrell (1990) ordered 323 nonfarm, private industries according to their mean hourly wage in 1986 and examined the change in the distribution of employment across industries between 1979 and 1986. In contrast to the Rosenthal and the McMahon and Tschetter studies, which found disproportionate employment growth in high-paying occupations, Costrell found employment growth was concentrated in low-paying industries.

A recent study by the U.S. Department of Labor, Bureau of Labor Statistics (1994) confirmed trends found in these earlier studies. Based on the analysis of data in the CES, the CPS, and the Covered Employment and Wages program (ES-202), that study examined changes in the distribution of both detailed occupations and industries over the 1988-92/93 periods. The study found that although job growth over the period was occurring primarily in low paying industries, the picture was more mixed when examined by occupations. The study found high net employment growth in both very high- and very low-paying occupations. Between 1988 and 1993, about 20 percent of the net growth in employment was accounted for by increases in occupations whose median earnings were in the top decile of the distribution, while another 20 percent of the net employment growth was accounted for by growth in occupations whose median earnings were in the bottom decile of the distribution. On balance, however, growth was disproportionately concentrated in occupations with median earnings above the median for all workers. When jobs were classified by detailed industry-occupational cells using CPS data, the study reports that almost three-quarters of the net employment growth over the period occurred in industry-occupation cells whose median earnings were above the median for all workers.

A. The Growth of Part-time, Temporary, and Contract Employment

Some observers have pointed to the growth in part-time, temporary, contract, and other atypical forms of employment as evidence of a decline in the quality of jobs in the U.S. economy. It is argued that many part-time, temporary, and contract workers, sometimes through no choice of their own, are part of a "contingent" workforce characterized by low wages, few benefits, and little job security. The growth in these forms of employment may simply be caused by supply-side forces, reflecting workers' desires for shorter hours and more flexible terms of employment. However, evidence suggests that at least some part of the growth in part-time and temporary employment may be attributed to increased demand by employers for these forms of employment.

Table 5 shows trends in part-time employment by major sector in the United States over the 1969-93 period. The rate of part-time employment is cyclically sensitive, increasing during recessions as employers cut back full-time workers' hours. The years 1969, 1979, and 1989, which are reported in the table, represent business cycle peaks and thus comparisons across these years should reflect trends in part-time employment. The rate of part-time employment has risen only modestly over the period, increasing from 15.1 percent in 1969 to 17.1 percent in 1979 to 17.6 in 1989. The rate of part-time employment in 1993, 18.1 percent, was slightly higher than in 1989, which may reflect the lingering effects of the 1990-91 recession.

Although the rate of aggregate part-time employment has increased very little in the last two decades, virtually all of the increase may be attributed to the increase in the rate of involuntary part-time employment. Those classified as involuntarily working part time include those who would like to be working full time but cannot find full-time work and those who have been temporarily put on short-time work by their employer. The rate of involuntary part-time employment rose from 2.5 percent in 1969 to 3.6 percent in 1979 to 4.1 percent in 1989 to 5.2 percent in 1993. The trend increase in involuntary part-time employment is particularly striking in the wholesale and retail trade sector, which has the highest rate of part-time employment. In 1969 the rate of involuntary part-time employment in that sector was 2.9 percent, representing 11 percent of all part-time workers in trade; in 1989 the rate of involuntary part-time employment was 6.3 percent or 21 percent of all part-time workers in trade; and in 1993 the rate of involuntary part-time employment was 8.4 percent or 28 percent of all part-time workers in trade. Many have noted that because virtually all of the increase in part-time employment in recent years may be attributed to the increase in involuntary part-time employment, the rise in part-time employment must reflect demand and not supply-side forces.[8]

Little in the way of data on temporary employment in the United States exists. The most widely cited statistics on temporary employment come from the U.S. Bureau of Labor Statistics's monthly establishment survey on employment in the help supply services industry. Most employment in this industry is in temporary help agencies.[9] Although employment in the help supply services industry is relatively small, it has grown rapidly in recent years, increasing from 0.5 percent of nonfarm payroll employment in 1982 to 1.5 percent in 1993.[10] Golden and Appelbaum (1993) and Golden (1994) have examined the determinants of the growth of employment in the temporary help sector in the United States and conclude that forces affecting employer demand rather than forces affecting household supply are more important in explaining the increase of employment in the temporary help sector.

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[8]See Blank (1990); Tilly (1991); and Callaghan and Hartman (1991).

[9]Employment in temporary help agencies also includes the permanent staff of the agencies, though the agency staff comprises a relatively minor part of total employment in the industry.

[10]The industry definition was changed and comparable figures are not available prior to 1982.

Data from a special supplement to the February 1995 CPS provides new information on temporary workers hired directly by a company. According to figures from this survey, the number of on-call workers and day laborers is about 75 percent greater than the number of temporary help agency workers. Little is known about trends in the use of these types of temporary workers hired directly by businesses.[11]

Companies may hire part-time or temporary workers in order to increase their employment flexibility or reduce their labor costs. Temporary workers, in particular, are more easily dismissed than permanent workers. Figure 1 depicts an index of employment in the help supply services industry, the aggregate services sector and the aggregate economy over the 1982-93 period. As is evident from the figure, not only did employment in the help supply services industry grow more rapidly over the period, but it also was much more cyclically sensitive during the 1990-91 recession than was employment in the service sector or the economy as a whole. Some employers may hire temporary workers to help cushion the effects of fluctuations in demand on their core workforce.

Under certain circumstances employers also may reduce labor costs by hiring part-time or temporary workers. Recent studies have suggested that, controlling for differences in employee characteristics, part-time workers in the United States do not receive lower wages than do full-time workers, but part-time workers do receive significantly fewer fringe benefits than do full-time workers.[12] Employers are much less likely to offer health insurance coverage to part-time than to full-time workers. U.S. law stipulates that employers offering a pension plan must generally cover at least 70 percent of employees working at least 1,000 hours per year. These regulations likely have contributed to the gap in pension plan coverage between part-time and full-time workers, and may provide a substantial incentive to employers to hire part-time workers. According to tabulations from the March 1993 CPS, 71 percent of full-time, full-year workers received health insurance in 1992 paid for entirely or in part by their employer, while just 23 percent of part-time, full-year workers received such health insurance benefits from their employer. In 1992, 61 percent of full-time, full-year workers but just 19 percent of part-time, full-year workers received pension coverage from their employer.

Employers may also avoid paying employee benefits by hiring workers on temporary contract. According to a 1987 survey by the Bureau of Labor Statistics of wages and benefits in the temporary help industry, only about one-fourth of temporary workers were in establishments that provided some health insurance benefits. Temporary workers received these benefits provided they met certain eligibility criteria. In most establishments offering health insurance

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[11]For information on the February 1995 CPS supplement, see U.S. Department of Labor, Bureau of Labor Statistics (1995). Results from an earlier survey of various types of temporary workers by the Bureau of National Affairs are reported in Abraham (1988, 1990).

[12]See Blank (1990) and Houseman and Osawa (1994) for analyses of wage differentials between part-time and full-time workers and Blank (1990) for an analysis of differences in the receipt of fringe benefits by part-time and full-time workers.

benefits temporary workers could qualify by working fewer than 500 hours.[13] In addition, some employers have saved on workers' compensation costs by hiring workers from temporary help agencies. This is because workers' compensation rates for temporary workers are based on rates in the services industry, which are low, and not on rates in the industries where the workers are placed. Finally, many employers use temporary help agencies to screen potential applicants for permanent jobs, thus saving on hiring costs.

In sum, evidence on the quality of net new jobs being generated in the U.S. economy in recent years is mixed. Since the 1970's net new jobs have been disproportionately created in low-wage industries, but they have been disproportionately created in high-wage occupations. Moderate growth in the share of employment in part-time and temporary jobs, which tend to have low wages, few benefits, and little job security, provides some evidence of deteriorating job quality.

3. The Decline in Real Wages and the Growth in Wage Inequality

Arguably, the real story about deteriorating job quality in the United States is one of deteriorating real wages across a broad spectrum of middle- and low-wage jobs—new and existing—and the accompanying increase in wage inequality.

Table 6 shows real hourly wages (in 1993 dollars) at the 10th, 50th, and 90th percentiles in 1979, 1989, and 1993 for all workers, and separately for male and female employees. These figures were tabulated from pooled monthly data from the CPS out-going rotation group. Agricultural workers and self-employed workers were excluded from the tabulations.[14]

During the 1980's real wages at the 10th percentile fell sharply, declining by over 13 percent. Real wages among male employees at the 10th percentile and among female employees at the 10th percentile both declined sharply during this period. The median hourly wage fell slightly over the period in real terms. However, the real median hourly wage for men fell by 10 percent, while the real median hourly wage for women rose by 5 percent. During the 1980's the real hourly wages of employees at the 90th percentile increased slightly. The real hourly wage at the 90th percentile among male employees remained virtually the same during the 1980's, while that among female employees increased by 15 percent. Thus, the 1980's was a period of falling real wages at the bottom of the wage distribution and stagnant or rising real wages at the top of the wage distribution.[15]

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[13]See Williams (1989).

[14]Also excluded were workers whose usual hourly wage fell below $0.50 or exceeded $100 in 1983 dollars.

[15]There has been considerable discussion over the accuracy of the Consumer Price Index (CPI), used to deflate these wage figures. Most believe that the CPI overstates true inflation, because it fails to adequately take into account changes in consumer spending patterns and improvements in product quality. Thus, the decline in real wages at the bottom of

This pattern of wage growth translated into a dramatic increase in wage inequality during the 1980's. The logarithm of the ratio of the hourly wage at the 90th percentile to the hourly wage at the 10th percentile increased from 1.26 to 1.42, or by 0.16 log points.[16] Most of the increase in inequality may be attributed to a widening of the gap in wages between the middle and the bottom of the wage distribution. The log of the ratio of the wage at the 50th percentile to that at the 10th percentile grew by 0.12 log points from 0.58 to 0.70 between 1979 and 1989.

During the first part of the 1990's the wage movements have been quite different for men and women. Between 1989 and 1993 real hourly wages among men fell by 10 percent at the 10th percentile, fell by 6 percent at the 50th percentile, and remained the same at the 90th percentile. Thus, wage inequality among men was even greater in 1993 than in 1989. Among women, real hourly wages have been stagnant or risen slightly at all points in the wage distribution during the 1990's and wage inequality among women increased little.

Table 7 shows trends in median real hourly wages by level of education. Those with less than a high school degree fared particularly poorly during the 1980's and early 1990's. The median real wage among those with less than a high school degree fell by 16 percent between 1979 and 1989 and by another 16 percent between 1989 and 1993. The median real wage of males with less than a high school degree fell by 20 percent from 1979 to 1989 and by another 20 percent from 1989 to 1993. The median real wage of females with less than a high school degree fell by 9 percent from 1979 to 1989 and by 10 percent from 1989 to 1993.

Male workers with only a high school degree and male workers with some college education, but no college degree, also fared poorly during the period. The median real wage of men with only a high school degree fell by 13 percent from 1979 to 1989 and by 10 percent from 1989 to 1993. The median real wage of men with some college fell by 12 percent over the 1979-89 decade and by 5 percent from 1989 to 1993. The median real wage among female workers with just a high school degree declined modestly, while that of female workers with some college increased slightly in both periods.

Workers with a college degree fared the best over the period. The median wage of men with a college degree rose slightly during the 1980's and has remained stagnant since then. The big winners during this period were women with a college degree. Their median real wage increased 12 percent from 1979 to 1989 and has increased slightly in the 1990's.

These wage trends have resulted in a dramatic increase in wage inequality by level of education during the 1980's and 1990's. Among men, wage inequality has increased because the real wages of less educated men have fallen dramatically, while the real wages of more educated men have been stagnant or have increased slightly. Among women, wage inequality has risen

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the wage distribution may be overstated, and the rise in real wages at the top of the distribution understated.

[16]Changes in log points approximate percent changes. A change of 0.16 log points is approximately equal to a 16 percent change in the 90-10 wage differential.

because real wages among less educated women have fallen sharply while real wages among more educated women have grown.

The trends in real wages and wage inequality by education level are evident in all age groups, as shown in Table 8. The median real wages of workers with only a high school degree fell during the 1980's and 1990's among workers in all age groups. The decline was particularly dramatic for men. For example, between 1979 and 1989 the median real wage of workers with only a high school education fell by 20 percent among men age 25-34; by 15 percent among men age 35-44; and by 11 percent among men age 45-54. The median real wage among college educated men fell slightly in all age groups, while the median real wage of college educated women rose substantially in all age groups from 1979 to 1993. Wage inequality by education level increased substantially among men and among women within all age groups.

The proportion of those receiving key fringe benefits such as health insurance and pension benefits from their employer also declined dramatically among less-educated workers during the 1980's and 1990's. Table 9 shows the percent of nonagricultural employees who received health insurance from their employer in the years 1980, 1989, and 1993.[17] The figures are also broken out by gender and level of education. In the aggregate, there has been a large increase in the proportion of employees who receive no health insurance coverage through their employer. In 1980, 36.8 percent of all non-agricultural employees received no health insurance through their employer; that figure rose to 42.7 percent in 1989 and to 43.8 percent in 1993. The decline in health insurance coverage was particularly great among less-educated men. Among male employees with less than a high school education, the percent not receiving any health insurance coverage through their employer rose from 42.4 percent in 1980 to 64.7 percent in 1993. Among male employees with a high school degree, the percentage not receiving any health insurance from their employer rose from 22.0 percent in 1980 to 38.0 percent in 1993. Even among male employees with some college education, the percentage receiving no health insurance on the job rose substantially from 31.0 percent to 39.5 percent between 1980 and 1993. The declines in employer-provided health care coverage were also large among less-educated female workers. Between 1980 and 1993 the percentage not receiving health insurance through their employer rose from 64.1 percent to 74.2 percent among female employees with less than a high school degree and from 44.2 percent to 51.4 percent among female employees with a high school degree. In contrast, the percentage of college educated men and women receiving no health insurance through their employer increased relatively little over the period.

Table 9 also provides breakouts on whether the employer pays all, some, or none of the health insurance premium among those receiving health insurance through their employer. In only a small percentage of cases where health insurance is provided does the employer pay none

[17]Because of changes in the information on health insurance collected in the survey, I report figures for 1980 rather than 1979.

of the health insurance premium, and this pattern has changed little over time.[18] However, there has been a notable decline in the percentage of employees who receive health insurance fully paid for by their employer. This decline is observed for men and women and across all education levels. Increasingly, employers who continue to offer health insurance to their employees have been trying to lower their health care costs by shifting some of the health insurance premium onto their employees.

Table 10 presents figures on trends in employer-provided pension plans by education and gender over the 1979-93 period. Although economywide there has been little change in the percentage of employees covered by pension plans at work, these aggregate figures mask significant differences in trends by education and gender. The percentage of less-educated women and more-educated men covered by some pension plan at work has remained about the same over the period, and the percentage of more- educated women covered by a pension plan has increased substantially. In contrast, the percentage of less-educated men covered by a pension scheme at work has fallen dramatically. For example, between 1979 and 1993 the percentage covered by no pension plan at work rose from 56.1 percent to 68.2 percent among male employees with less than a high school education and from 37.2 percent to 45.5 percent among male employees with a high school degree.

Thus, data on health insurance and pension coverage reinforce trends apparent in the wage data. Those experiencing the greatest decline in real wages during the 1980's and 1990's—the less educated and, in particular, less-educated men—have also experienced the greatest declines in benefits coverage.

A. Reasons for the Decline in Real Wages and the Growth in Wage Inequality

The growth in earnings inequality in recent years has resulted not because those at the top of the earnings distribution have done so well, but rather because those in the bottom half of the distribution have fared so poorly. Since the mid-1980's much research has been devoted to understanding declining real wages and the growth in earnings inequality.[19] A number of factors have contributed to this phenomenon.

One popular hypothesis is that the quality of American education and the American workforce, particularly among less-skilled workers, has deteriorated, thus resulting in declining real wages at the bottom of the distribution and increasing wage inequality. However, as a number of researchers have observed, this theory may be largely dismissed because wage differentials have widened over time even within cohorts, as is illustrated in Table 8. Bluestone and Harrison (1986), who were among the first to note the decline in real wages and growth in

[18]In these cases the employee may benefit by gaining access to group health insurance rates and by being able to pay for health insurance in pre-tax dollars.

[19]Levy and Murname (1992), Freeman and Katz (1994), Gittleman (1994), and OECD (1993) provide surveys of the literature.

wage inequality, attributed it to the decline of employment in manufacturing, a sector where low-skilled, low-educated workers receive relatively high wages, and the growth of employment in services, a sector where these workers receive much lower wages on average. On the surface, basic shifts in the industrial composition of employment during the 1980's are consistent with this hypothesis. The share of nonagricultural employment in manufacturing fell from 23.4 percent in 1979 to 17.9 percent in 1989, while the share of employment in the aggregate services sector rose from 70.6 percent in 1979 to 76.6 percent in 1989.

Several researchers have studied the impact of changes in the industrial composition of employment on increased wage inequality across groups of workers. Blackburn, Bloom, and Freeman (1990), Katz and Revenga (1989), and Gittleman (1994) all found that changes in the industrial composition of employment explain between one-fifth to one-third of the increase in wage differentials between college educated and high school educated workers. However, because wage inequality increased significantly within industries, changes in the industrial composition of employment cannot explain all or even most of the increase in aggregate wage inequality.

There also have been tremendous shifts in the occupational composition of employment. Although a large part of the shift in the occupational composition of employment in the U.S. economy may be explained by shifts in the industrial composition of employment, the introduction of new technology and other factors have resulted in important shifts in the occupational composition of employment within industries too. Some have speculated that technical change tends to increase the demand for cognitive skills and reduce the need for physical labor, thus reducing the demand for less educated workers relative to more educated workers. Gittleman (1994) found that shifts in the industrial composition of employment by itself account for 31 percent of the growth in wage inequality between college and high school educated workers, and that shifts in the industrial and occupational composition of employment together account for 43 percent of the increase. Thus, shifts in the occupational structure of jobs appear to have adversely affected less-educated relative to more- educated workers. To the extent that these within-industry shifts in occupation are caused by new technology, they also suggest that new technology has adversely affected earnings inequality.

Some of the decline in manufacturing employment—and thus the decline in wages of less-skilled, less-educated workers and the increase in wage inequality—may be ascribed to the increase in international trade during the 1980's. Although some discount the importance of trade in explaining these trends,[20] Sachs and Shatz (1994) noted that the large declines in manufacturing employment and the widening of the wage differentials between skilled and unskilled workers during the 1970's and 1980's coincided with sharp growth in trade with developing countries. Borjas, Freeman, and Katz (1992) noted that the growth in the trade deficit with developing countries coupled with the increase in immigrants, who are predominantly less educated, effectively increased the supply of less-educated workers relative to more-educated workers in

[20]See, for example, Krugman and Lawrence (1994).

the United States during the 1980's. They estimated that 15-25 percent of the decline in wages of workers with only a high school degree relative to the wages of those with a college degree may be attributed to trade and immigration. The impact on the relative wages of high school dropouts is more pronounced. They estimated that 30-50 percent of the decline in the wages of high school dropouts relative to the wages of all other workers may be explained by the growth in trade and immigration.

Another factor contributing to the decline in the relative wages of less-educated, less-skilled workers has been the decline in unions. Between 1978 and 1993 the rate of unionization among nonagricultural employees fell from 19.7 percent to 15.6 percent. Controlling for shifts in industry composition, Blackburn, Bloom, and Freeman (1990) found that deunionization accounts for 19 percent of the relative wage change between high school and college graduates age 25 to 64, and 15 percent f the wage change between high school and college graduates age 25 to 34.

The falling value of the minimum wage in real terms is also a plausible candidate for explaining the drop in real earnings at the bottom of the wage distribution and the increase in wage inequality. Although in nominal terms the minimum wage increased from $2.90 per hour in 1979 to $4.25 per hour in 1993, in real terms the minimum wage fell by 25 percent over the period. Assessments about the effects of the minimum wage on wage inequality depend partly on assumptions about how the minimum wage affects the overall structure of wages; a higher minimum wage might have had spillover effects, raising the wages of workers who were earning above minimum wages. The greater the spillover effect, the greater the impact raising the minimum wage would have had on dampening the decline in real wages at the bottom of the wage distribution and thus the growth in wage inequality. Assessments of the impact of the declining real minimum wage also depend on assumptions about any unemployment that would result from raising the minimum wage. Raising the minimum wage presumably would reduce employment of low-wage workers, thereby reducing wage inequality. Blackburn, Bloom, and Freeman (1990) simulated the distribution of male earnings in 1988 assuming the minimum wage was the same, in real terms, as it had been in 1980, and assuming no spillover or unemployment effects. They found that this higher minimum wage would have had very little effect on earnings inequality across education groups. Mishel and Bernstein (1994) did a similar simulation, but they allowed for some spillover effects of a higher minimum wage on low-wage workers, though they did not allow for any unemployment effects on low-wage workers. Like Blackburn, Bloom, and Freeman, they found that a higher minimum wage would have had rather modest effects on wage inequality among males. However, their simulation suggests that a higher minimum wage would have tremendously reduced or even reversed the trend toward greater wage inequality among females.

A number of researchers have suggested that non-neutral technological change played a major role in explaining the widening pay gap by skill or education level. Bound and Johnson (1992) found that non-neutral technical change is by far the most important factor explaining widening earnings differentials across education groups during the 1980's. Supporting these findings, Bartel and Lichtenberg (1987) and Mincer (1989, 1991) found that the wages and the

share of employment of highly educated or skilled workers rise fastest in technologically progressive industries. Similarly, Berman, Bound and Griliches (1993) found that increases in the relative employment of highly educated workers are positively correlated with investment in computer technology within the manufacturing sector. Krueger (1993) found that the wage premium for workers who use computers on the job is substantially greater for more-educated than for less-educated workers, and he concluded that this fact explains some of the increase in the college wage premium during the 1980's. However, Mishel and Bernstein (1994) expressed skepticism of the emphasis that many researchers place on technical change in explaining wage trends, arguing that there is no evidence that the rate of technical change has accelerated in recent years. Blackburn, Bloom, and Freeman (1990) and Katz and Murphy (1992) argued that supply shifts, in conjunction with demand shifts, explain the increase in wage inequality. Although the supply of college graduates relative to less-educated workers increased during the 1980's, the growth rate in the relative supply of college educated workers decelerated substantially between the 1970's and the 1980's. If one posits that the demand for college educated workers relative to less-educated workers was increasing at a constant rate over time, in part because of non-neutral technological change, then the deceleration in the growth rate of the relative supply of college educated workers could be responsible for the fall in the real wages of less-educated workers and the growth in wage inequality across education levels.

A number of researchers have examined experiences in other industrialized countries to provide insights into the phenomenon of declining real wages at the bottom of the wage distribution and growing wage inequality in the United States. Many industrialized countries did experience increases in wage inequality during the 1980's, but the growth in inequality was generally small. Only the United Kingdom experienced a large increase in wage inequality similar to that found in the United States, but in the United Kingdom, unlike in the United States, real wages at the bottom did not fall. Perhaps the experiences of Australia and Canada, where real wages at the bottom of the distribution fell and wage inequality increased moderately during the 1980's, were the most similar to those of the United States. Recall from Table 1 that, like the United States, Australia and Canada also experienced strong employment growth and little change in their unemployment rate during the 1980's.

Various explanations have been offered for the disparate trends in real wages and wage inequality across countries. It is generally believed that demand forces are similar across countries. Most industrialized countries have experienced a decline in the share of employment in manufacturing and an increase in the share of employment in the services sector, and there is little reason to believe that the forces of technological change should differ significantly across industrialized countries.

As noted above, Katz and Murphy (1992), Blackburn, Bloom, and Freeman (1990) and others have argued that a deceleration in the rate of growth in the supply of college graduates relative to less-educated workers, coupled with demand that has been shifting in favor of more-educated workers, can explain the increase in wage inequality by level of education in the United States. Several researchers have studied whether this simple demand and supply story can account for trends in earnings differentials in other countries. The evidence is mixed. Sweden,

the United Kingdom, Australia, and Japan, like the United States, experienced sharp declines in the rate of growth in college educated workers relative to other workers. Wage differentials between college and high school educated workers increased in the United Kingdom and Australia, though increases in the latter were more moderate than in the United States and the United Kingdom. But in Japan a large deceleration in the rate of growth of college educated workers relative to less-educated workers in the 1980's was accompanied by only a small increase in wage differentials by level of education in the last half of the decade. Moreover, in Sweden the sharp deceleration in the growth of the relative supply of college educated workers resulted in no increase in wage inequality by level of education.[21]

Others have suggested that various institutional factors may help explain trends in Continental European countries, where real wages at the bottom have not fallen, and where wage inequality has not increased or increased only slowly during the 1980's. These countries often have centralized wage setting institutions that moderate any market pressure to increase wage differentials. These countries also have more generous unemployment benefits than does the United States and have other social safety nets that dampen downward pressure on wages. Higher minimum wages in some countries, such as France, may have helped prevent the severe erosion of real wages at the bottom of the wage distribution, as has occurred in the United States. Moreover, in countries such as Japan and Germany, companies invest heavily in training workers without postsecondary education, providing them with a broad set of skills. As a result of such training, workers without postsecondary education in those countries may be better able to perform tasks similar to those performed by workers with postsecondary education than is the case in the United States, where company training is largely reserved for more-educated workers.[22] The training of less-educated workers, in turn, may dampen the effects of a shift in the relative demand for more skilled workers on the relative wages of workers by level of education.[23]

4. Conclusion

Conventional wisdom holds that, compared with economies in other industrialized countries, the U.S. economy has performed extremely well in terms of job growth, but has performed quite poorly in terms of creating and maintaining high-wage jobs. This stereotype is only partially true.

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[21]Figures on the growth in the relative supply of college educated workers along with discussions of various studies are presented in OECD (1993). Freeman and Katz (1994) also reference some of these studies.

[22]For a summary of evidence of the incidence of training by level ofeducation, see U.S. Department of Labor (1994), pp. 78-89.

[23]For a discussion of this issue, see Abraham and Houseman (1995).

Simple comparisons of job growth across countries are misleading. Although job growth has been greater in the United States than in most other industrialized countries, the growth rate of the working-age population is the most important determinant of employment growth and generally explains most of the cross-country differences in employment growth. Some of the higher employment growth in the United States compared with that in Europe and Japan during the 1980's is accounted for by greater growth in labor force participation. However, the greater growth in labor force participation in the United States is partially due to the greater growth in female labor force participation. Because falling real wages among men and sharply higher divorce rates pushed many women into the labor force during the 1980's, the increase in female labor force participation is not necessarily a sign of economic health. Only 20 to 30 percent of the differential in employment growth rates between the United States and European countries during the 1980's is accounted for by cross-country differences in unemployment rate trends.

Moreover, not all groups benefitted from the strong job growth in the United States in the 1980's. The growth in the unemployment rates and sharp decline in the labor force participation rates of less-educated, prime-age men has been particularly disturbing. In addition, strong employment growth in the United States during the 1980's was accompanied by weak productivity growth such that growth in real GDP per capita was not greater in the United States than in other industrialized countries. Finally, the rapid job growth in the 1980's was followed by weak job growth in the early 1990's, though the 1990-91 recession makes it difficult to tell whether this is a short-term phenomenon or the beginning of a new trend.

While job growth in the U.S. economy is not as rosy as is often pictured, trends in the quality of new jobs being created are not as black. Bluestone and Harrison (1986) argued that although job growth during the 1980's was strong, the jobs being created were low-wage ones. Studies that try to measure the wage structure of net new jobs in the economy, however, show a mixed picture. These studies find that during the 1970's, 1980's, and 1990's net new jobs have been disproportionately added in industries whose median wage is below the median for the aggregate economy, but that a disproportionate number of net new jobs have been added in occupations whose median wage is above the median for the aggregate economy. It should be noted, however, that at least in recent years the occupational distribution of the net new jobs has been bimodal. Over the 1988-93 period, although a disproportionate number of new jobs have been added in high paying occupations, 20 percent of the net new jobs were added in occupations in the bottom decile of the earnings distribution. The growth in the share of temporary and involuntary part-time employment, while still relatively small, is also a disturbing phenomenon, because these jobs tend to be low paying, have few benefits, and have little job security.

The real story about deteriorating job quality in the United States, however, is one of deteriorating wages and benefits across a broad spectrum of jobs—new and existing. During the 1980's real wages fell in the bottom half of the wage distribution and wage inequality increased dramatically. Real wages in the bottom half of the wage distribution continued to fall during the first part of the 1990's. Less-educated workers have been the hardest hit. The median hourly earnings of male and female workers with a high school education or less fell dramatically during the 1980's and 1990's. The percentage of male and female workers with a high school education

or less receiving health insurance benefits from their employer and the percentage of male workers with a high school education or less covered by a pension plan at work also fell dramatically over the period. Evidence suggests that a wide range of factors—including a shift in the industrial and occupational composition of jobs in the economy, the growth in trade with developing countries, the growth in immigration, the decline in unions, non-neutral technological change, and the deceleration in the growth of the college educated relative to less-educated workers—have contributed to the decline in real wages and benefits among less-educated, less-skilled workers and the rise in wage inequality.

The U.S. experience has been somewhat unique. The fall in real wages at the bottom of the wage distribution and/or the increase in wage inequality has been substantially greater in the United States than in other industrialized countries. Yet, the experiences of other countries offer no easy solutions to the U.S. problem of falling real wages. Wage growth and job growth are closely linked. Labor market institutions and policies such as centralized bargaining, high minimum wages, and generous unemployment benefits in some European countries, for example, mitigated downward pressures on the real wages of less-educated, less-skilled workers. But the failure of real wages to fall in many European countries as they did in the United States probably contributed to the rapid rise in unemployment and slow job growth in those countries.

Assuming competitive labor markets, the only way to increase the real wages of workers and avoid higher unemployment is to increase worker productivity.[24] With this in mind, many, including those in the Clinton administration, have advocated government programs to increase worker training and have looked to countries such as Germany and Japan, in which companies provide extensive workplace training, for lessons. To reverse the huge decline in real wages among less-educated, less-skilled workers in the United States through training, however, will be neither easy nor cheap.[25]

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[24]Some argue that the labor markets for low-wage, low-skilled workers are best characterized as a monopsony. In this case, an increase in, say, the minimum wage could actually increase employment and wages.

[25]See Heckman (1993) for a critique of the Clinton administration's proposed training programs. Heckman argues that the United States would have to invest huge sums of money in workforce training to restore the real earnings of less educated workers to their 1979 level.

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Table 1. Decomposition of employment growth in selected countries, 1979-89[a]

	Rate of growth of ...			
	Employment	Population	Labor Force Participation Rate	Employment Rate (1-unemployment rate)
U.S.	1.72	1.23	0.43	0.06
Australia	2.35	1.94	0.41	0.01
Canada	1.83	1.29	0.55	-0.01
Japan	1.13	1.23	-0.08	-0.02
Germany	0.42	0.60	0.13	-0.29
France	0.21	0.89	-0.30	-0.38
U.K.	0.55	0.57	0.19	-0.21

[a]All figures refer to civilian working-age population.

Source: Author's calculations based on figures in U.S. Department of Labor, Bureau of Labor Statistics, "Comparative Labor Force Statistics, Ten Countries, 1959-1993," May 1994.

Table 2. Unemployment rates and labor force participation rates among prime age workers by gender, education, and age, 1979-93

	Labor force participation rate:				Unemployment rate:			
	<HS	HS	Some coll	Coll+	<HS	HS	Some coll	Coll+
Age 25-34								
1979	90.4	97.1	95.5	96.1	8.5	4.7	3.9	2.0
1989	89.0	95.3	95.1	96.4	9.4	5.4	3.6	2.1
1993	86.8	93.9	94.4	95.9	13.2	8.0	5.5	3.1
Age 35-44								
1979	90.7	96.9	96.7	98.4	5.5	2.7	1.8	1.6
1989	85.1	94.2	95.4	98.0	8.2	4.5	3.3	1.9
1993	83.0	93.0	94.4	97.4	10.6	6.8	3.7	2.5
Age 45-54								
1979	85.4	93.5	93.8	97.4	4.5	2.6	1.8	1.3
1989	80.9	92.0	93.8	96.5	5.8	3.5	2.7	2.2
1993	74.8	90.0	92.1	96.4	10.3	5.4	5.3	3.2
Age 55-64								
1979	64.6	77.4	78.4	85.7	3.7	2.3	2.3	2.0
1989	55.8	68.1	71.7	79.7	5.1	3.5	2.7	2.2
1993	56.1	65.4	70.1	77.8	7.5	3.0	3.6	3.7
Age 25-34								
1979	47.5	62.4	67.5	75.6	14.0	6.5	5.8	4.0
1989	51.5	71.9	77.6	83.7	15.1	6.5	4.7	2.8
1993	47.7	71.8	77.8	84.7	16.8	8.2	6.0	3.3
Age 35-44								
1979	51.7	65.4	67.9	73.0	8.5	4.2	3.6	3.4
1989	57.0	76.1	79.6	83.0	8.3	4.2	3.2	2.2
1993	54.5	75.7	80.6	83.5	13.3	5.7	5.2	3.0
Age 45-54								
1979	47.8	60.3	63.7	72.5	5.9	3.6	3.1	2.7
1989	51.6	71.1	77.0	83.4	7.1	2.9	2.4	2.3
1993	49.0	72.6	79.1	86.0	8.6	4.9	5.1	2.7
Age 55-64								
1979	34.2	45.0	50.0	52.9	5.4	2.6	3.1	1.0
1989	33.0	47.0	53.8	59.0	4.3	2.6	2.3	2.1
1993	30.8	47.9	56.5	62.5	6.4	3.6	4.4	2.7

Source: Author's tabulations from merged files of CPS outgoing rotation group.

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Table 3. Decomposition of the growth rate in real GDP per capita in selected countries, 1979-90

	Growth rate in:		
	Real GDP/capita	Real GDP/person employed	Employment/ population
U.S.	1.6	1.0	0.6
Australia	1.6	0.6	0.8
Canada	1.8	1.1	0.7
Japan	3.5	2.9	0.6
Germany	1.7	1.4	0.3
France	1.7	2.0	-0.3
U.K.	1.9	1.6	0.3

Source: OECD, *Employment Outlook: Historical Statistics, 1960-1990*, Paris, 1992.

Table 4. Distribution of employment, by sector, 1969-93

	Employment (1000's)				Employment Share (percent)			
	1969	1979	1989	1993	1969	1979	1989	1993
Mining	628	958	693	599	0.9	1.1	0.6	0.5
Const.	3,410	4,463	5,187	4,573	4.9	5.0	4.8	4.2
Manu.	20,121	21,040	19,442	17,802	28.7	23.4	17.9	16.2
Trans., Comm.& Pub. Util.	4,449	5,136	5,644	5,710	6.3	5.7	5.2	5.2
Trade	14,644	20,192	25,770	25,848	20.9	22.5	23.8	23.5
Finance, Insur., & Real Estate	3,558	4,975	6,695	6,605	5.1	5.5	6.2	6.0
Services	11,102	17,112	27,120	30,193	15.8	19.1	25.0	27.4
Pub. Admin.	12,227	15,947	17,779	18,841	17.4	17.8	16.4	17.1
TOTAL	70,139	89,823	108,330	110,171	100.0	100.0	100.0	100.0

Source: U.S. Bureau of Labor Statistics, *Employment and Earnings*, establishment data, annual averages.

Table 5. **Involuntary and voluntary part-time employment, by sector in the United States, 1969-93 (in percent)**

	1969			1979			1989			1993		
		Invol.	Vol.		Invol.	Vol.		Invol.	Vol.		Invol.	Vol.
Const	8.6	4.4	4.2	10.5	5.5	5.0	10.5	6.1	4.4	11.9	7.6	4.4
Mfg.	5.1	2.2	2.9	5.7	2.4	3.3	5.6	2.3	3.3	5.8	2.7	3.1
Trans, public utilities, comm	7.8	1.8	6.0	9.0	2.6	6.4	8.7	2.7	6.0	8.6	3.2	5.4
Trade	26.3	2.9	23.4	30.0	5.4	24.6	29.7	6.3	23.4	30.3	8.4	21.9
Finance, insur, real estate	10.5	1.0	9.5	11.9	1.7	10.2	11.5	1.8	9.7	11.0	2.3	8.7
Services	26.2	3.1	23.1	25.0	4.1	21.0	24.0	4.7	19.3	23.6	5.9	17.6
Public Admin	6.2	0.8	5.4	6.6	1.3	5.3	5.8	1.0	4.9	5.9	1.3	4.6
All Ind	15.1	2.5	12.6	17.1	3.6	13.5	17.6	4.1	13.5	18.1	5.2	12.9

Source: U.S. Bureau of Labor Statistics, *Employment and Earnings*, various issues.

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Table 6. The distribution of hourly wage rates, 1979-1993 (1993 dollars)[a]

	Percentile:			Log (wage ratios)		
	10th	50th	90th	90th/ 10th	50th/ 10th	90th/ 50th
1979	5.95	10.63	20.89	1.26	0.58	0.68
1989	5.15	10.33	21.37	1.42	0.70	0.73
1993	4.98	9.97	21.17	1.45	0.69	0.75
			Men			
1979	6.79	13.46	23.81	1.26	0.68	0.57
1989	5.80	12.08	23.92	1.42	0.73	0.68
1993	5.21	11.39	23.93	1.52	0.78	0.74
			Women			
1979	5.69	8.31	15.25	0.99	0.38	0.61
1989	4.69	8.72	17.40	1.31	0.62	0.69
1993	4.78	8.72	18.19	1.34	0.60	0.74

[a]All figures exclude agricultural and self-employed workers.

Source: Author's tabulations from merged files of the CPS outgoing rotation group.

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Table 7. Median real wage by education, 1979-93 (1993 constant dollars)[a]

	Highest level of education:				Log (wage ratios):		
	<HS	HS	Some coll	Coll+	Coll+/ <HS	Coll+/ HS	Coll+/ some coll
1979	8.86	10.09	10.55	14.71	0.51	0.38	0.33
1989	7.45	9.24	10.12	15.25	0.72	0.50	0.41
1993	6.25	8.89	9.93	15.23	0.89	0.54	0.43
1979	11.08	13.16	13.46	17.23	0.44	0.27	0.25
1989	8.87	11.43	11.82	17.68	0.69	0.44	0.40
1993	7.14	10.23	11.26	17.53	0.90	0.54	0.44
1979	6.70	7.99	8.55	11.89	0.57	0.40	0.33
1989	6.09	7.86	8.76	13.30	0.78	0.53	0.42
1993	5.48	7.61	8.86	13.60	0.91	0.58	0.43

[a] All figures exclude agricultural and self-employed workers.

Source: Author's tabulations from merged files of the CPS outgoing rotation group.

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Table 8. Median real wages by education and age, 1979-93 (1993 constant dollars)[a]

	Age 25-34:			Age 35-44:			Age 45-54:		
	HS	Coll+	log (Coll+ /HS)	HS	Coll+	log (Coll+ /HS)	HS	Coll+	log (Coll+ /HS)
					Total				
1979	10.45	13.70	0.27	11.30	17.00	0.40	11.40	18.40	0.48
1989	9.26	14.01	0.41	10.13	16.87	0.51	10.56	17.95	0.53
1993	8.75	13.59	0.44	9.88	16.88	0.54	10.09	17.91	0.57
					Male				
1979	13.22	15.35	0.15	15.12	19.80	0.27	15.67	21.58	0.32
1989	10.64	14.93	0.34	12.87	19.14	0.40	13.92	21.40	0.43
1993	9.93	14.81	0.40	11.71	18.89	0.48	12.91	20.35	0.46
					Female				
1979	8.27	11.82	0.36	8.44	12.67	0.41	8.58	13.19	0.43
1989	7.92	12.91	0.49	8.31	14.40	0.55	8.58	14.40	0.52
1993	7.54	12.62	0.52	8.10	14.95	0.61	8.46	15.06	0.58

[a] All figures exclude agricultural and self-employed workers.

Source: Author's tabulations from merged files of the CPS outgoing rotation group.

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Table 9. Trends in employer-provided health insurance, by education and gender, 1980-93 (in percent)[a]

	Female											
		Provided, Employer Pays:				Provided, Employer Pays:				Provided, Employer Pays:		
	Not Prov.	All	Some	None	Not Prov.	All	Some	None	Not Prov.	All	Some	None
All Education Levels												
1980	36.8	27.8	32.5	3.0	27.7	31.4	37.7	3.2	47.6	23.5	26.3	2.6
1989	42.7	20.8	33.9	2.6	35.7	23.2	38.4	2.7	50.2	18.3	29.1	2.4
1993	43.8	16.7	36.7	2.8	38.6	18.4	40.4	2.7	49.3	15.0	32.9	2.8
< High School												
1980	51.4	20.2	25.4	3.0	42.4	24.2	30.1	3.2	64.1	14.5	18.7	2.7
1989	62.4	12.6	22.8	2.2	56.8	15.0	25.8	2.5	70.1	9.2	18.7	2.0
1993	68.8	7.7	21.0	2.5	64.7	9.5	23.4	2.4	74.2	5.3	17.8	2.7
High School												
1980	33.4	30.1	33.6	2.9	22.0	35.4	39.4	3.2	44.2	25.1	28.1	2.6
1989	43.7	20.7	33.1	2.5	35.6	24.1	37.6	2.7	51.8	17.3	28.6	2.3
1993	44.6	16.3	36.1	3.0	38.0	18.8	40.2	3.1	51.4	13.8	31.9	3.0
Some College												
1980	39.1	27.0	31.1	2.7	31.0	29.6	36.4	3.0	48.3	24.1	25.2	2.3
1989	43.9	19.8	33.7	2.7	36.2	22.3	38.7	2.7	51.2	17.4	28.9	2.6
1993	44.6	16.6	36.0	2.8	39.5	18.1	39.7	2.7	49.3	15.1	32.6	3.0
College +												
1980	22.3	33.7	40.7	3.3	15.1	35.7	45.7	3.5	33.4	30.5	33.1	3.0
1989	28.3	27.0	42.0	2.7	22.5	27.6	47.0	2.9	35.5	26.2	35.8	2.6
1993	26.5	23.1	48.0	2.5	21.3	24.0	52.3	2.5	32.4	22.1	43.0	2.5

[a] All figures exclude agricultural and self-employed workers.

Source: Author's tabulations of the Current Population Survey, March 1981, 1989 and 1993.

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Table 10. Trends in employer-provided pension plans, by education and gender, 1979-93 (in percent)[a]

	Male			Female					
	Not Prov.	Provided, Employer Pays: Yes	No	Not Prov.	Provided, Employer Pays: Yes	No	Not Prov.	Provided, Employer Pays: Yes	No
All Education Levels									
1979	46.1	46.0	8.0	40.9	53.0	6.1	52.3	37.6	10.1
1989	44.6	43.7	11.7	42.2	48.0	9.8	47.2	39.1	13.8
1993	44.1	43.6	12.3	42.9	46.5	10.6	45.4	40.4	14.2
< High School									
1979	61.6	32.3	6.2	56.1	38.6	5.4	69.3	23.4	7.2
1989	66.1	24.2	9.7	64.0	27.5	8.5	68.9	19.8	11.4
1993	69.7	18.8	11.5	68.2	21.1	10.7	71.7	15.7	12.6
High School									
1979	44.2	48.3	7.5	37.2	57.4	5.4	50.8	39.7	9.6
1989	48.0	41.4	10.6	45.5	45.8	8.7	50.6	37.0	12.4
1993	47.3	41.6	11.2	45.5	45.3	9.3	49.1	37.8	13.1
Some College									
1979	47.0	43.1	10.0	41.4	50.5	8.0	53.5	34.3	12.2
1989	43.4	42.8	13.8	40.2	48.2	11.6	46.4	37.6	16.0
1993	42.7	42.8	14.5	40.9	46.5	12.6	44.3	39.4	16.4
College +									
1979	27.9	63.4	8.7	26.2	67.6	6.2	30.4	57.2	12.4
1989	28.1	59.4	12.6	26.1	63.3	10.6	30.4	54.6	15.0
1993	26.0	62.3	11.7	25.4	64.6	10.1	26.8	59.6	13.7

[a] All figures exclude agricultural and self-employed workers.

Source: Author's tabulations of the Current Population Survey, March 1980, 1989 and 1993.

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